PacifiCorp

Energy West Mining Company

Deer Creek Mine

9th East Breakouts

C/015/0018

Phase I Bond Release Application

General Technical Requirements for Phase Bond Release

DEER CREEK MINE
C/015/0018
9TH EAST PORTAL BREAKOUTS
General Technical Requirements for Phased Bond Release
Tech-006: March 23, 2001

Section 5, Prior to Bond Release Request

1. Provide certification that reclamation was done according to the designs in the approved plan, or provide as-built plans including designs, reports, and drawings of the reclamation work accomplished and any modifications, amendments, or changes to the reclamation plan as a result of the reclamation.

See Attachment A for certification. Reclamation of Phase 1 Area was completed according to the plans as outlined in the MRP. Any modifications made to the plans were submitted and approved in the MRP prior to this submittal.

2. Provide the maintenance agreements for structures approved to remain for the postmining land use. The maintenance agreements must state that the facilities will be properly managed and maintained by the land owner or managing agent following bond release and accept full liability for the facility.

N/A

3. Where the postmining land use is changed from the premining land use in accordance with R645-301-412 through R645-301-414, the MRP must address all applicable performance standards for bond release and the criteria by which successful reclamation for the post mining land use with be judged.

N/A

Section 5, I, A-D, Request for Bond Release

I. GENERAL ADMINISTRATIVE REQUIREMENTS - A request for bond release must contain or reference the following administrative information:

A. NOTARIZED SIGNATURE - A request will contain the notarized signature of a responsible official of the permittee, certifying that the information contained in the request is true and correct to the best of the official's information and belief; and all applicable reclamation activities have been accomplished in accordance with the requirements of the Act, the Regulatory Program, and the approved Reclamation Plan.
Refer to Attachment A

B. NOTIFICATION LETTERS - Copies of letters of notification must be submitted to the Division. Notice Letters shall, at a minimum, contain the same information as submitted in the newspaper Advertisement (See part C below) and shall be sent by the permittee to all parties who have a valid interest in release of bond. Notice Letters shall identify the intent to seek bond release, and shall be sent to the following:

1. Surface Owners
2. Subsurface Owners
3. Adjoining Property Owners
4. County Commissioners
5. Mayors
6. Local Planning Agencies
7. Municipal Authorities
8. Sewage and Water Treatment Authorities
9. Water Companies

Depending on land ownership and management, other agencies that may need to be notified include:

1. State Division of State History
2. State Division of Water Resources
3. State Department of Environmental Quality
4. State Division of Wildlife Resources
5. Federal Agencies (OSM, BLM, Forest Service, Natural Resources Conservation Service, Fish and Wildlife Service, Mine Safety and Health Administration, etc.)

Draft letter is presented in Attachment B. A list of recipients are as follows;

United States Forest Service
Manti-LaSal National Forest
599 Price River Drive
Price, Utah 84501

US Department of the Interior
Bureau of Land Management
324 South State, Suite 301
Salt Lake City, Utah 84111

State of Utah
Department of Natural Resources
Division of Wildlife Resources
Attn: Brent Stettler
475 West Price River Drive, Suite C
Price, Utah 84501

Emery County Commission
Attn Commissioners
P.O. Box 329
Castle Dale, Utah 84513

Public Lands Council
Ray Peterson - Director
P.O. Box 1228
Castle Dale, Utah 84513

Emery County Recorders Office
Dixie Swasey - County Recorder
P.O. Box 698
Castle Dale, Utah 84513

C. NEWSPAPER ADVERTISEMENT - Newspaper advertisements should be approved by the Division PRIOR to publication to ensure completeness. A copy of a newspaper advertisement which is published at least once a week for four consecutive weeks in a newspaper of the locality of the mining operation shall be submitted to the Division within 30 days after the date of bond release application. The advertisement shall contain the following items:

1. The permit, number name of the permittee, and the permit approval date.

2. A description of the precise location of the land affected.

3. The number of acres to be considered for release.

4. The amount and type of bond the Division currently holds.

5. The amount of bond being sought for release.

6. A description of the type of reclamation work performed and the dates when the work was performed and completed.

7. A description of the results achieved in relation to the mining and reclamation plan (i.e. stability, restoration of drainages, vegetation establishment.

8. A statement indicating written comments, objections and requests for public hearings or informal conferences may be submitted to the Division of Oil, Gas and Mining.

9. The closing date for submission of such comments, etc. (At least 30 days AFTER the last publication.

10. The Address of the Division of Oil, Gas and Mining.

D. PERMIT CONDITIONS - Demonstrate all outstanding permit conditions have been satisfied.

Refer to Attachment C for a draft copy of the newspaper advertisement.

Section 5, II, A, 1-9:

BOND RELEASE REQUEST (ALL PHASES) - A request for bond release must contain or reference (specific sections or exhibits from the MRP) the following technical information:

1. A legal description of the permit area.

T. 17S., R. 7E, SLM, UT

***Sec 22, SESWSE** (Contains 10 Acres)*

Total permit acreage equals 19,722.21 acres, more or less.

2. Maps of a scale of 1"=500' or larger (e.g. 1"=50') clearly illustrating the boundaries of lands for which bond release is being requested. The maps shall:

- **a. Delineate all disturbed areas,**
- **b. Show the reclamation dates and acreage of each reclaimed area,**
- **c. Show the operation or reclamation status of each area, such as active; temporary cessation; or phase bond release, and,**
- **d. Show areas proposed for bond release.**

Refer to enclosed maps in Attachment D. All disturbed areas are delineated with dates of reclamation, status, etc.

3. Notify the Division 3 months in advance of vegetation sampling for PHASE II and PHASE III Bond Release to confirm adequacy of sampling methodology and schedule sampling dates.

This item is not applicable to this application. This application only applies to Phase I bond release.

4. The specific reclamation treatments, areas, and work accomplished which is to be considered for bond release. Reference the pages or sections where postmining topography, drainage control, vegetation, intended land use, etc., are contained in the MRP.

Refer to the Deer Creek Mine MRP, Volume 2, R645-301-500 Engineering Appendix R645-301-500-B (9th East Grimes Wash Portals) and Volume 3, Appendix XIV , R645-301-500 Appendix A, Photos (separate volumes of the MRP).

5. A brief history of mining and reclamation activities indicating when mining operations began and ended and when earthwork and topsoil distribution began and ended.

The 9th East breakout area is located in the Right Fork of Grimes Wash. The (2) portals in this area were developed in the 1920's. Both portals were wagon operations. In June 1977, for ventilation purposes, (3) more portals, called the 9th East Portals were developed. All portals and access are considered a pre-SMRCA sites. The 1977 intake portals were equipped with concrete collars. The breakouts at 9th East were utilized for intake ventilation purposes from 1977 until 1990, when they were permanently sealed following the Mine Safety Health Administration regulations.

Final reclamation of the 9th East breakouts began in the fall of 1999 and was completed in December of the same year. The concrete collars were removed and all the portals, including the (2) 1920 portals were backfilled. The site was fertilized, mulched and seeded contemporaneously with backfilling and grading. The Reclamation Plan, currently in the MRP, for the site was followed, refer to pre-post reclamation photos in Attachment E.

6. Dates of last seeding, rill and gully repair or other augmentative practices, and references to approval for the husbandry practices occurring during the period of extended responsibility.

Site seeding began and was completed in the fall of 1999.

7. Remaining sediment control structures (ponds, silt fences, straw bales) and diversions to be removed and any release of refuse piles and ponds from MSHA requirements.

No sediment control structures remained at the conclusion of Phase 1 and 2 reclamation.

8. A detailed scheduled and cost estimate for the remaining reclamation work to be accomplished. The cost estimate shall include, but not limited to, cost for remaining reclamation treatments; revegetation; diversion and sediment pond removal; access road removal; vegetative, water, and other monitoring requirements; surveys or studies to determine reclamation success; maintenance costs; and engineering and contingency costs and any reclamation that may be needed to bring the site to the premining land use should the proposed post mining land use fail.

As stated in the MRP: "The 9th East breakouts are included in the Deer Creek bond estimation. Upon completion of Phase I Bond Release, PacifiCorp will revise the bond estimation: Item 2A - Portal Sealing Reclamation, reducing the number of portals to reclaim. Bond reduction will not be requested."

9. A summary of the current bond amount, total disturbed area acreage, and the acreage, locations, dates and amounts of bond released for Phase I, Phase II, and Phase III reclamation.

The current bond is $4,113,000.00. Total permitted area is 19,722.21 acres. Total disturbed area is 98.05 acres.

Section 5, II, B, 1-6:

PHASE I BOND RELEASE - Bond release for PHASE I may be considered only after the applicant demonstrates and the Division is satisfied that all the reclamation requirements for backfilling, regrading and drainage control measures for PHASE I are met. This phase may include topsoil replacement.

For PHASE I bond release, the following information must be included in the bond release package or reference in the MRP.

1. All applicable information required in: BOND RELEASE REQUEST (ALL PHASES)

This information is given above in Section 5, II, A, 1-9. A map showing the permit area is presented in Attachment D.

2. A map illustrating the "as-built" topography (refer to : PRIOR TO BOND RELEASE REQUEST)

Refer to map DS1889D of Attachment D.

3. Postmining Contour Topographic Maps (no smaller than 1"=500') showing detail including:

- **a. Postmining hydrologic features including restoration of natural drainages. It should also show ponds, diversions, wells and monitoring sites to be removed at PHASE II,**
- **b. Cross sections showing important topographic features including but not necessarily limited to, approximate original contour, road, etc.,**
- **c. Dates of backfilling and grading activities,**
- **d. Dates of topsoil replacement,**
- **e. Topsoil replacement depths.**

Refer to map DS1889D of Attachment D.

4. Overburden chemical analysis results, and discussion on potential adverse affects on plant growth or water quality.

The 9th East breakouts are located on a east facing steep slope in the Right Fork of Grimes Wash. The area is dominated by rock outcrop, rubble land, and shallow soils.

The soil samples contained in the Cottonwood Mine MRP, Volume 2 Part 4 were carried out in conjunction with the Order I soil survey used to classify the soil types of the surrounding Cottonwood Mine area. Soil samples were taken at numerous locations to determine the suitability of the soil for potential reclamation. The soil sampling referenced in Part 2 of the Cottonwood MRP were carried out in 1980, 1983 and 1989 (refer to Cottonwood MRP, Volume 2, Part 4, "Soils Of The Wilberg Mine Site: Report On Physical And Chemical Analysis"). A series of samples (denoted on Map 2-18 as 1112-1116, Cottonwood MRP, Volume 5) were collected on a pre-SMCRA fill slope near the reclamation site. The following table lists the physical and chemical properties of the samples collected in 1980:

Wilberg/Cottonwood Mine Soil Samples							
Physical Analysis							
Sample #	*Identification*	*Sand*	*Silt*	*Clay*	*Texture*	*pH*	*ECe*
1112	*0-6"*	*63*	*24*	*13*	*SL*	*8.2*	*0.6*
1113	*6-14"*	*63*	*26*	*11*	*SL*	*8.4*	*0.4*
1114	*14-21"*	*60*	*27*	*13*	*SL*	*8.0*	*1.2*
1115	*21-31"*	*57*	*28*	*15*	*SL*	*8.5*	*0.7*
1116	*31-45"*	*58*	*28*	*14*	*SL*	*8.4*	*1.5*

Chemical Analysis						
Sample #	*SAR*	*%OM*	*(Ca+Mg)*	*Na*	*%K*	*P(ppm)*
1112	*0.3*	*4.4*	*5.2*	*0.5*	*0.02*	*2.9*
1113	*0.3*	*2.1*	*4.1*	*0.5*	*0.02*	*2.1*
1114	*0.4*	*1.3*	*9.7*	*0.9*	*0.02*	*0.6*
1115	*0.5*	*1.5*	*5.7*	*0.8*	*0.02*	*0.3*
1116	*0.4*	*1.3*	*14.5*	*1.2*	*0.02*	*0.1*

***Physical Analysis**: All of the samples have sandy loam textures, with no apparent variation with depth.*
***Chemical Analysis**: Soil reaction (pH) ranged from 8.0 to 8.5 with no apparent trends with increased depth. Sodium Adsorption Ratios were fairly low ranging from 0.3 to 0.5.*

In addition to the baseline samples collected from 1980 through 1989, PacifiCorp committed to collecting soils samples from the baseline sites every five years to document soil characteristics over time. Samples were collected in 2001 and repeated in 2006, refer to Attachment F for Location Map and analysis results.

5. Evaluation of topsoil or substitute soil including chemical and physical analysis and replace depths (if included in this phase of bond release).

The 9th East breakouts are a pre-SMRCA site and topsoil/subsoil material was not segregated during construction activities. The site was originally disturbed prior to 1922 as documented by Speiker, U.S.G.S. Bulletin 819 (refer to Introduction Section). A baseline survey was conducted to determine the quantities of available spoil material to be used as backfill (refer to Map DS1785D). Based upon the survey, adequate fill exists to create overland flow at the portal site and along the access road. Refer to Item Section 5, II, B, 4 for a discussion related to the chemical and physical analysis of the soil material utilized in reclamation of the 9th East area.

6. Evaluation of subsoil including analysis and replacement depths (optional).

See Item Section 5, II, B, 4 above.

PacifiCorp

Energy West Mining Company

Deer Creek Mine

9th East Breakouts

C/015/0018

Phase I Bond Release Application

Attachment A - Notarized Certification

PacifiCorp
Energy West Mining Company
Deer Creek Mine
C/015/0018
9th East Portal Breakouts

Phase I Bond Release on Approximately 0.60 Acres of Land Related to the Mining Complex

I hereby certify, to the best of my knowledge and belief, that all the information contained in this request is true and correct and that all applicable reclamation activities have been accomplished in accordance with the requirements of the Act, the regulatory program, and the approved reclamation plan.

_____
Print Name

_____
Signature, Position, Date

Subscribed and sworn to before me this _____ day of _____, 2006.

_____
Notary Public

My Commission Expires: _____, 20___
Attest: State of _____
County of _____

PacifiCorp

Energy West Mining Company

Deer Creek Mine

9th East Breakouts

C/015/0018

Phase I Bond Release Application

Attachment B - Draft Notification Letter

DATE

Interested Party
Street Address
City, State, Zip code

Dear Interested Party:

This letter is sent to inform you that Energy West Mining Company, a subsidiary of PacifiCorp, has filed an application for Phase I bond release of the Deer Creek Mine 9th East Breakout site, Permit Number C/015/0018. The purpose of this action is to commence responsibility release procedures for this area. PacifiCorp currently has a $4,113,000.00 surety bond payable to the Division of Oil, Gas, and Mining. No reduction of the bond is being sought at this time. This parcel of land contains approximately 0.6 disturbed acres and is contained in the SE1/4 of the SW1/4 of the SE1/4 of Section 22, Township 17 South, Range 7 East, SLM. The permit area of the mine encompasses approximately 19,722.21 acres.

The 9th East breakout area is located in the Right Fork of Grimes Wash. The (2) portals in this area were developed in the 1920's. Both portals were wagon operations. In June 1977, for ventilation purposes, (3) more portals, called the 9th East Portals were developed. All portals and access are considered a pre-SMRCA sites. The 1977 intake portals were equipped with concrete collars. The breakouts at 9th East were utilized for intake ventilation purposes from 1977 until 1990, when they were permanently sealed following the Mine Safety Health Administration regulations.

Final reclamation of the 9th East breakouts began in the fall of 1999 and was completed in December of the same year. The concrete collars were removed and all the portals, including the (2) 1920 portals were backfilled. The site was fertilized, mulched and seeded contemporaneously with backfilling and grading. The Reclamation Plan, currently in the MRP, for the site was followed.

As required by the State of Utah, R645-Coal Mining Rules (R645-301-880), all adjoining property owners, local governmental bodies, etc, must be notified, informing them of the operators intention to seek release from bond. A public notice will be published in the Emery County Progress commencing on DATE and will run for four (4) consecutive weeks. Comments may be submitted to the Division of Oil, Gas and Mining at an address of 1594 West North Temple, Suite 1210, Salt Lake City, Utah 84114-5801.

If you have any questions, or require further information pertaining this bond release application, please feel free to call me at (435) 687-4711 or Chuck Semborski at 4720.

Sincerely,

Guy Davis
Sr. Environmental Health Specialist

cc Pam Grubaugh-Littig, (DOGM)
Scott Child, (IMC)
file, (EWMC)

PacifiCorp

Energy West Mining Company

Deer Creek Mine

9th East Breakouts

C/015/0018

Phase I Bond Release Application

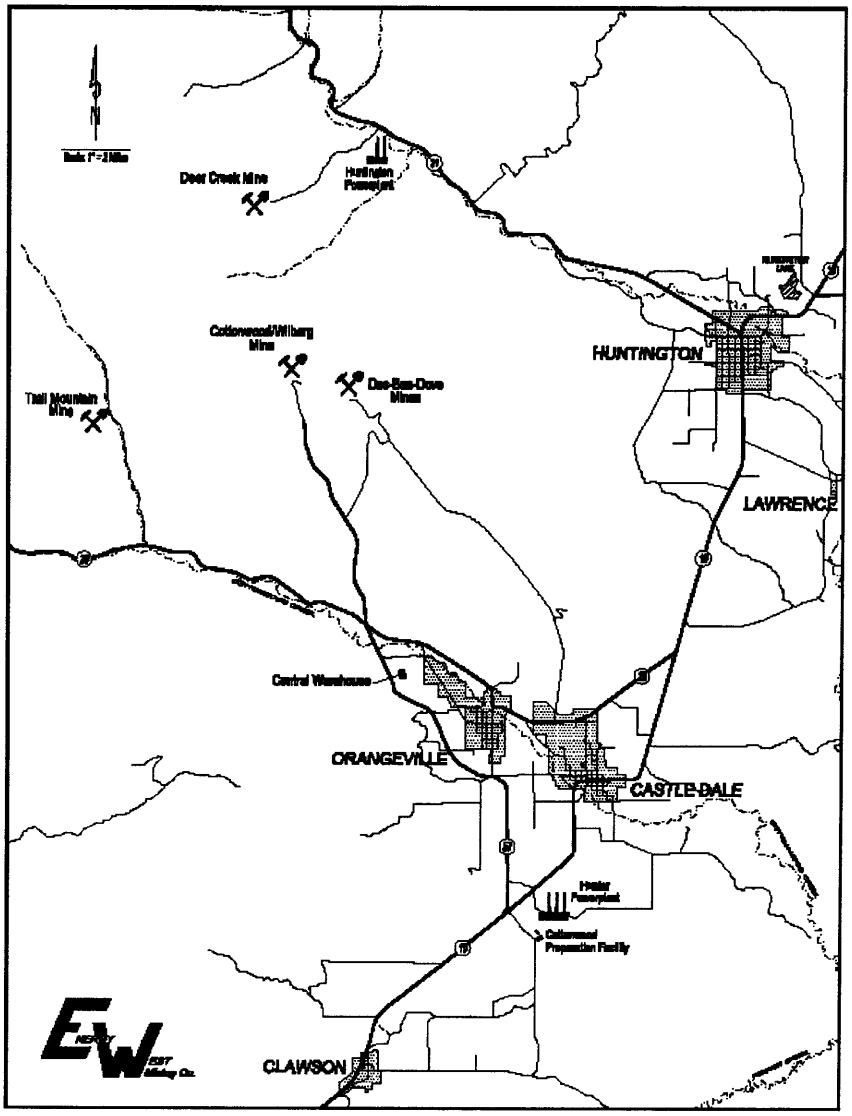
Attachment C - Public Notice

PacifiCorp
Deer Creek Mine
9th East Breakouts
C/015/0018

Phase I Bond Release Application

Energy West Mining Company
P.O. Box 310
Huntington, Utah 84528

PacifiCorp, by and through its wholly-owned subsidiary, Energy West Mining Company ("Energy West") as mine operator, hereby submits an application for Phase I bond release for the Deer Creek Mine 9th East Breakout site. The said area, located in SE1/4 of the SW1/4 of the SE1/4 of Section 22, Township 17 South, Range 7 East, SLB&M, has met the regulations of the R645 Utah Coal Rules in regards to Phase I Bond Release (R645-301-880.300). The total acreage proposed for release is approximately 0.6 acres and is located near the Cottonwood Wilberg Portals, as shown on index map.



The 9th East Breakout site includes (3) portals developed in 1977 for mine ventilation. These (3) concrete collared portals were used until 1990. In addition, the area had (2) portals developed in the 1920's for a small operation. The 1977 portals were sealed in 1990. All of the portals and access road were reclaimed in the fall of 1999.

Currently, a surety bond is filed with the Division of Oil, Gas and Mining in the amount of $4,113,000.00 and is payable to the State

of Utah, Division of Oil, Gas and Mining (DOGM), and the Office of Surface Mining Reclamation and Enforcement (OSM). PacifiCorp requests that the liability associated with Phase 1 be released. PacifiCorp does not request that a reduction of the bond be made at this time.

A copy of the Phase I application may be examined at the office of the Division of Oil, Gas and Mining, 1594 West North Temple, Suite 1210, Salt Lake City, Utah 84114-5801 and also at the Recorders Office located in the Emery County Courthouse in Castle Dale, Utah. Written comments, objections, or requests for an informal conference may be submitted to the Salt Lake City address. Said comments must be submitted thirty (30) days from the date of the last publication of this notice. This notice is being published to comply with the Surface Mining Control and Reclamation Act of 1977, and State and Federal regulations promulgated pursuant to said Act.

Published in the Emery County Progress for four consecutive weeks beginning DATE.

PacifiCorp

Energy West Mining Company

Deer Creek Mine

9th East Breakouts

C/015/0018

Phase I Bond Release Application

Attachment D - Maps

PacifiCorp

Energy West Mining Company

Deer Creek Mine

9th East Breakouts

C/015/0018

Phase I Bond Release Application

Map

Reclamation of the 9th East Portals: Blind Canyon Seam
DS1785D

Energy West Mining Company

Deer Creek Mine

9th East Breakouts

C/015/0018

Phase I Bond Release Application

Map

Reclamation of the 9th East Portals: Phase 1 Bond Release
DS1889D

PacifiCorp

Energy West Mining Company

Deer Creek Mine

9th East Breakouts

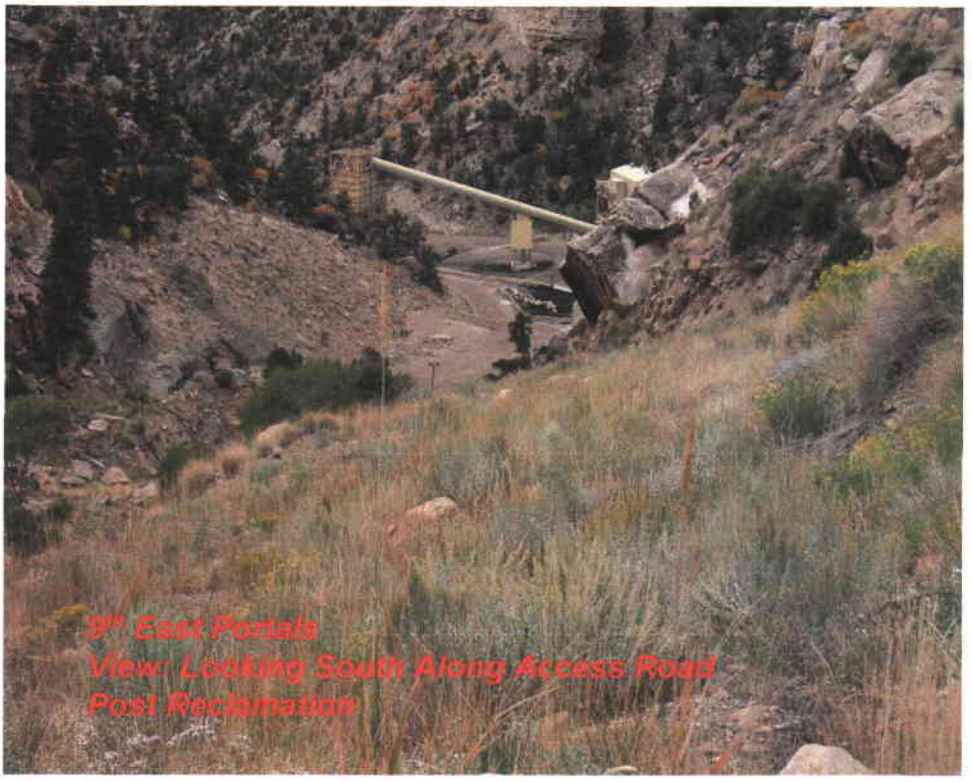
C/015/0018

Phase I Bond Release Application

Attachment E - Pre and Post Reclamation Photos

Deer Creek Mine
C\015\0018

9th East Portals
Phase 1 Bond Release



Deer Creek Mine
C\015\0018

9th East Portals
Phase 1 Bond Release

PacifiCorp

Energy West Mining Company

Deer Creek Mine

9th East Breakouts

C/015/0018

Phase I Bond Release Application

Attachment F - Soil Sampling Location Map and Analysis Results

PacifiCorp

Energy West Mining Company

Deer Creek Mine

9th East Breakouts

C/015/0018

Phase I Bond Release Application

Attachment F - Soil Sampling Location Map

PacifiCorp

Energy West Mining Company

Deer Creek Mine

9th East Breakouts

C/015/0018

Phase I Bond Release Application

Attachment F - Soil Sampling Analysis Results

2001

Inter-Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, WY 82801

Energy West Mining Co.

Huntington, UT

Client Project ID: Cottonwood Mine
Date Received: 04/04/01

Set #0101S06587
Report Date: 05/17/01

Lab Id	Sample Id	Depths (Inches)	pH s.u.	Saturation %	EC mmhos/cm	Calcium meq/L	Magnesium meq/L	Sodium meq/L	SAR	Available Sodium ppm	Exchangeable Sodium meq/100g
101S06587	CW8401	12 - 18	7.4	25.4	5.27	21.7	15.3	21.2	4.93	0.55	0.01
101S06588	CW8501	0 - 6	7.8	24.3	0.99	2.52	2.61	1.94	1.21	1.18	1.13
101S06589	CW8601	6 - 12	7.7	25.2	0.71	2.04	2.39	1.59	1.07	0.46	0.42
101S06590	CW8701	12 - 18	7.7	25.4	0.68	1.88	2.27	1.76	1.22	0.43	0.39
101S06591	CW8801	0 - 6	7.6	28.1	0.47	2.44	1.06	1.06	0.80	0.40	0.37
101S06592	CW8901	6 - 12	7.5	27.7	0.58	3.54	1.34	0.94	0.60	0.36	0.33
101S06593	CW9001	12 - 18	7.2	29.5	2.27	23.5	5.35	1.23	0.32	0.46	0.42
101S06594	CW9101	0 - 6	7.3	29.6	0.94	4.49	2.64	1.15	0.61	0.46	0.43
101S06595	CW9201	6 - 12	7.3	29.7	0.89	4.19	2.93	1.35	0.72	0.46	0.42
101S06596	CW9301	12 - 18	7.2	31.2	2.54	20.9	11.2	1.84	0.46	0.36	0.30
101S06597	CW9401	0 - 6	7.2	35.6	2.91	18.5	16.0	4.06	0.98	0.70	0.56
101S06598	CW9501	6 - 12	7.3	40.5	3.46	18.9	18.9	5.14	1.18	0.79	0.58
101S06599	CW9601	12 - 18	7.4	37.6	3.76	20.3	21.6	5.97	1.30	0.79	0.57
101S06600	CW7001	0 - 6	8.1	22.0	1.16	4.37	1.69	6.29	3.62	0.95	0.81
101S06601	CW7101	6 - 12	7.6	27.2	4.75	9.78	4.16	29.6	11.2	2.19	1.38
101S06602	CW7201	12 - 18	7.4	25.4	6.99	20.9	8.14	41.3	10.9	2.46	1.41

SS8

SS9

Abbreviations for extractants: PE= Saturated Paste Extract, H20Sol= water soluble,AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate
Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neut. Pot.= Neutralization Potential
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed By: _____

Joey Sheeley
Soils Lab Supervisor

Inter-Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, WY 82801

Energy West Mining Co.

Huntington, UT

Client Project ID: Cottonwood Mine
Date Received: 04/04/01

Set #0101S06587
Report Date: 05/17/01

Lab Id	Sample Id	Depths (Inches)	Coarse Fragments %	Sand %	Silt %	Clay %	Texture	1/3 Bar %	15 Bar %
101S06587	CW8401	12 - 18	20.4	63.0	23.0	14.0	SANDY LOAM	11.8	5.1
101S06588	CW8501	0 - 6	16.4	60.0	26.0	14.0	SANDY LOAM	12.8	6.1
101S06589	CW8601	6 - 12	18.5	62.0	25.0	13.0	SANDY LOAM	13.8	7.0
101S06590	CW8701	12 - 18	19.2	63.0	24.0	13.0	SANDY LOAM	13.7	6.6
101S06591	CW8801	0 - 6	25.1	40.0	40.0	20.0	LOAM	15.5	7.7
101S06592	CW8901	6 - 12	15.4	46.0	36.0	18.0	LOAM	14.6	6.8
101S06593	CW9001	12 - 18	28.2	44.0	37.0	19.0	LOAM	14.6	6.9
101S06594	CW9101	0 - 6	30.6	40.0	41.0	19.0	LOAM	16.0	8.2
101S06595	CW9201	6 - 12	20.8	41.0	40.0	19.0	LOAM	16.1	8.0
101S06596	CW9301	12 - 18	16.0	40.0	42.0	18.0	LOAM	16.5	8.3
101S06597	CW9401	0 - 6	28.4	38.0	38.0	24.0	LOAM	16.4	11.3
101S06598	CW9501	6 - 12	24.9	35.0	37.0	28.0	CLAY LOAM	17.5	12.2
101S06599	CW9601	12 - 18	30.5	40.0	38.0	22.0	LOAM	17.1	11.3
101S06600	CW7001	0 - 6	25.6	66.0	22.0	12.0	SANDY LOAM	12.5	4.6
101S06601	CW7101	6 - 12	28.7	63.0	25.0	12.0	SANDY LOAM	13.4	4.7
101S06602	CW7201	12 - 18	30.9	68.0	20.0	12.0	SANDY LOAM	13.5	4.3

SS 8

SS 9

Abbreviations for extractants: PE= Saturated Paste Extract, H20Sol= water soluble,AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate
Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neut. Pot.= Neutralization Potential
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed By: _____

Joey Sheeley
Soils Lab Supervisor

Inter-Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, WY 82801

Energy West Mining Co.

Huntington, UT

Client Project ID: Cottonwood Mine
Date Received: 04/04/01

Set #0101S06587
Report Date: 05/17/01

Lab Id	Sample Id	Depths (Inches)	TOC	Total Sulfur %	T.S. AB t/1000t	Neutral. Pot. t/1000t	T.S. ABP t/1000t	Boron ppm	Nitrogen-Nitrate ppm	TKN %	Selenium ppm
101S06587	CW8401	12 - 18	1.2	<0.01	0.00	262	262	0.58	2.80	0.08	<0.02
101S06588	CW8501	0 - 6	2.7	0.02	0.62	328	328	0.92	3.74	0.11	<0.02
101S06589	CW8601	6 - 12	3.1	0.02	0.62	337	336	1.05	2.88	0.12	<0.02
101S06590	CW8701	12 - 18	2.9	<0.01	0.00	335	335	1.10	3.62	0.12	<0.02
101S06591	CW8801	0 - 6	3.5	0.02	0.62	409	409	0.92	3.74	0.13	<0.02
101S06592	CW8901	6 - 12	1.6	0.02	0.62	418	418	0.82	0.74	0.09	<0.02
101S06593	CW9001	12 - 18	1.3	<0.01	0.00	427	427	0.84	1.52	0.08	<0.02
101S06594	CW9101	0 - 6	4.9	0.03	0.94	406	405	0.99	13.2	0.18	<0.02
101S06595	CW9201	6 - 12	5.7	0.03	0.94	393	392	0.89	7.62	0.17	<0.02
101S06596	CW9301	12 - 18	5.8	0.04	1.25	377	376	0.96	5.64	0.17	<0.02
101S06597	CW9401	0 - 6	1.3	0.02	0.62	271	271	1.33	<0.02	0.08	<0.02
101S06598	CW9501	6 - 12	0.8	0.03	0.94	239	238	1.13	1.44	0.08	<0.02
101S06599	CW9601	12 - 18	0.6	0.03	0.94	255	254	1.31	0.02	0.08	<0.02
101S06600	CW7001	0 - 6	2.0	<0.01	0.00	313	313	0.87	0.24	0.08	<0.02
101S06601	CW7101	6 - 12	2.0	0.03	0.94	294	293	1.06	2.96	0.08	<0.02
101S06602	CW7201	12 - 18	2.7	0.03	0.94	267	266	0.83	0.60	0.11	<0.02

SS8

SS9

Abbreviations for extractants: PE= Saturated Paste Extract, H20Sol= water soluble,AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate
Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neut. Pot.= Neutralization Potential
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed By: _____

Joey Sheeley
Soils Lab Supervisor

PacifiCorp

Energy West Mining Company

Deer Creek Mine

9th East Breakouts

C/015/0018

Phase I Bond Release Application

Attachment F - Soil Sampling Analysis Results

2006

Inter·Mountain Laboratories, Inc.

Soil Analysis Report
Energy West Mining Co
P.O. Box 310
Huntington, UT 84528

Report ID: S0608196001
Date: 10/2/2006
Work Order: S0608196

Project:
Date Received: 8/9/2006

Lab ID	Sample ID	Depths Ft.	pH s.u.	Saturation %	Electrical Conductivity dS/m	Field Capacity %	Wilt Point %	Calcium meq/L	Magnesium meq/L	Sodium meq/L	SAR
S0608196-021	CTW3706 Hole #6	6-12	7.9	26.2	0.51	11	8	2.69	1.74	0.51	0.34
S0608196-022	CTW3806 Hole #6	12-18	8.1	29.5	0.43	11	8	1.74	1.58	0.43	0.34
S0608196-023	CTW3906 Hole #7	0-6	7.9	29.8	0.41	11	8	2.50	0.96	0.32	0.24
S0608196-024	CTW4006 Hole #7	6-12	7.9	31.4	0.61	15	8	3.49	1.71	0.45	0.28
S0608196-025	CTW4106 Hole #7	12-18	8.0	29.5	0.60	16	8	3.09	2.00	0.73	0.46
S0608196-026	CTW4206 Hole #8	0-6	7.6	33.5	2.70	16	10	22.4	12.0	2.11	0.51
S0608196-027	CTW4306 Hole #8	6-12 SS8	7.4	38.8	2.71	19	13	21.0	14.4	2.35	0.56
S0608196-028	CTW4406 Hole #8	12-18	7.3	39.5	3.02	20	12	22.7	15.9	2.98	0.68
S0608196-029	CTW4506 Hole #9	0-6	7.8	31.5	0.44	15	8	2.39	1.37	0.34	0.25
S0608196-030	CTW4606 Hole #9	6-12 SS9	7.8	31.9	0.54	14	8	2.62	1.70	0.57	0.39
S0608196-031	CTW4706 Hole #9	12-18	7.6	36.1	0.72	15	9	3.64	2.40	0.56	0.32

These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H20Sol= water soluble,AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate
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Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A Barten
Karen Barten, Soil Lab Supervisor

Inter·Mountain Laboratories, Inc.

Soil Analysis Report
Energy West Mining Co
P.O. Box 310
Huntington, UT 84528

Report ID: S0608196001
Date: 10/2/2006
Work Order: S0608196

Project:
Date Received: 8/9/2006

Lab ID	Sample ID	Depths Ft.	Boron ppm	Selenium ppm	Sand %	Silt %	Clay %	Texture	Coarse Fragment %
S0608196-021	CTW3706 Hole #6	6-12	0.49	<0.02	67.0	22.0	11.0	Sandy Loam	16.7
S0608196-022	CTW3806 Hole #6	12-18	0.51	<0.02	66.0	20.0	14.0	Sandy Loam	16.3
S0608196-023	CTW3906 Hole #7	0-6	0.48	<0.02	68.0	18.0	14.0	Sandy Loam	21.6
S0608196-024	CTW4006 Hole #7	6-12	0.53	<0.02	58.0	26.0	16.0	Sandy Loam	16.5
S0608196-025	CTW4106 Hole #7	12-18	0.62	<0.02	57.0	28.0	15.0	Sandy Loam	11.6
S0608196-026	CTW4206 Hole #8	0-6	1.33	<0.02	69.0	21.0	10.0	Sandy Loam	24.4
S0608196-027	CTW4306 Hole #8 SS8	6-12	0.98	<0.02	44.0	36.0	20.0	Loam	15.0
S0608196-028	CTW4406 Hole #8	12-18	1.04	<0.02	64.0	23.0	13.0	Sandy Loam	19.7
S0608196-029	CTW4506 Hole #9	0-6	0.63	<0.02	62.0	25.0	13.0	Sandy Loam	20.0
S0608196-030	CTW4606 Hole #9 SS9	6-12	0.73	<0.02	72.0	20.0	8.0	Sandy Loam	40.6
S0608196-031	CTW4706 Hole #9	12-18	1.00	<0.02	68.0	21.0	11.0	Sandy Loam	24.0

These results apply only to the samples tested.

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Karen Barten, Soil Lab Supervisor

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Project:
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Lab ID	Sample ID	Depths Ft.	Total Sulfur %	T.S. AB t/1000t	Neut. Pot. t/1000t	T.S. ABP t/1000t
S0608196-021	CTW3706 Hole #6	6-12	<0.01	<0.01	353	353
S0608196-022	CTW3806 Hole #6	12-18	<0.01	<0.01	393	393
S0608196-023	CTW3906 Hole #7	0-6	0.02	0.48	433	432
S0608196-024	CTW4006 Hole #7	6-12	0.01	0.41	436	436
S0608196-025	CTW4106 Hole #7	12-18	0.01	0.37	438	438
S0608196-026	CTW4206 Hole #8	0-6	0.06	1.76	363	361
S0608196-027	CTW4306 Hole #8 SS8	6-12	0.09	2.89	399	396
S0608196-028	CTW4406 Hole #8	12-18	0.09	2.69	311	308
S0608196-029	CTW4506 Hole #9	0-6	0.03	0.91	361	360
S0608196-030	CTW4606 Hole #9 SS9	6-12	0.12	3.76	309	306
S0608196-031	CTW4706 Hole #9	12-18	0.13	4.15	271	267

These results apply only to the samples tested.

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Karen Barten, Soil Lab Supervisor